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FINAL REPORT

ASTRONOMY/WILDERNESS EXPERIENCE

Astrophysics Grant Supplement for Education (AGSE)
NASA GRANT NAG 5-2245

NATIONAL AERONAUTICS AND SPACE ADMINISTRATION

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Mordecai-Mark Mac Low March 11, 1996
(S) (Date)

Final Report for Astronomy/Wilderness Experience, an Astrophysical Grant Supplement for Education, attached to ROSAT Grant NAG5-2245.

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We requested funding for astronomy equipment and supplies, and camping equipment and supplies, to introduce students from DuSable High School, a public school on the South Side of Chicago, to astronomy and the natural environment. DuSable High School is across the street from the Robert Taylor Homes, the largest public housing project in the city of Chicago, and indeed in the nation. Over half the students on our camping trips had only been outside the city of Chicago once before, several of them never before.

Our program began in the fall with the purchase of two telescopes, a new Edmund Scientific Astroscan 4.5", and a used 6" equatorial mount telescope purchased from an individual advertising on the Internet, and of ten new 8x50 binoculars. These instruments were immediately put to use by students preparing science fair projects. The most successful project was a measurement of the rotation period of the Sun that placed in the top 90 in the city of Chicago. Another student attempted to observe an eclipsing double variable star, but due to bad weather during a Chicago winter, was never able to observe an event. Early in the spring, the occasion of a partial solar eclipse over Chicago gave Brown the opportunity to use the purchased telescopes to expose over 200 students and teachers to basic astronomical concepts during viewing sessions.

When the weather became warm enough for camping, we began a series of four camping trips, with 4 to 10 students on each trip for a total of 24 students, five of whom went on more than one trip. We found ourselves relying heavily on volunteers for these trips, and on Brown's own additional work. He organized all aspects of camping, as well as taking on a large share of the instruction for each trip, and ended up working from early morning until late night each camping day, as well as spending long evenings organizing each trip in advance. We also had two to four additional volunteers on each trip, drawn primarily from the investigators' social circle, but also including two other teachers from DuSable High School.

Our trips were all to the Evergreen Valley Campground, close to Starved Rock State Park in central Illinois. This site was relatively close to Chicago and provided a safe yet interesting environment. It was not an ideal dark sky site, unfortunately, due to a large shopping mall some miles north -- something to be considered in other programs of this sort.

We found that, due to the chaotic environment the students are immersed in, that it was difficult to predict in advance which students would actually be able to come on each trip, and whether they would be adequately equipped. We provided most camping equipment, and

even basic clothing, from our own and our volunteers' personal equipment, aside from the purchase of a number of camping pads and some cookware.

Our trips were moderately structured -- about 3/4 of the time was either involved in instruction, hikes, or group camping work (meal preparation, setup and takedown of tents, etc.) We found that short periods of instruction interspersed with other activities worked well. At night we had astronomy sessions; on the earlier trips especially, these were limited by the temperature, as standing or lying in one place started to get rather cold.

We identified several lessons learned during this program:

1. Recruit experienced campers as volunteers to serve as counselors and aides for tent set-up, meal preparation, etc. The Sierra Club had a similar program, for example, in another high school. Alternatively, choose a site that offers easier accommodations for sleeping and eating. The campground we used, for example, offered cabins and a kitchen for slightly more money. Tents and campfire cooking sapped preparation time, actual trip time, and much energy.

2. Plan many structured activities, with varied tones. Activities that set positive tones in the beginning were noticeably better: trust games, journal writing in which students envisioned a society they might create from scratch out in the woods, and relaxation exercises helped students escape the mental effects of the city and enjoy the woods and stars.

3. Several students commented that once out in the woods, they made friends with other students who they didn't think they would have anything to do with. We failed to reconvene the camping groups once back in the city, and I think missed an opportunity to maintain some of the effects of the experience.